Corrigendum to: Search for dijet resonances in proton–proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter and other models [Phys. Lett. B 769 (2017) 520–542]

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Abstract: A search is presented for narrow resonances decaying to dijet final states in proton–proton collisions at s√=13TeV using data corresponding to an integrated luminosity of 12.9 $fb1$. The dijet mass spectrum is well described by a smooth parameterization and no significant evidence for the production of new particles is observed. Upper limits at 95% confidence level are reported on the production cross section for narrow resonances with masses above 0.6 TeV. In the context of specific models, the limits exclude string resonances with masses below 7.4 TeV, scalar diquarks below 6.9 TeV, axigluons and colorons below 5.5 TeV, excited quarks below 5.4 TeV, color-octet scalars below 3.0 TeV, W bosons below 2.7 TeV, Z bosons below 2.1 TeV and between 2.3 and 2.6 TeV, and RS gravitons below 1.9 TeV. These extend previous limits in the dijet channel. Vector and axial-vector mediators in a simplified model of interactions between quarks and dark matter are excluded below 2.0 TeV. The first limits in the dijet channel on dark matter mediators are presented as functions of dark matter mass and are compared to the exclusions of dark matter in direct detection experiments.

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Corrigendum

Corrigendum to "Search for dijet resonances in proton–proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter and other models" [Phys. Lett. B 769 (2017) 520–542]

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This corrigendum refers to an error in the CMS excluded regions in the scattering of dark matter (DM) particles on nucleons as a function of the DM mass (m_{DM}) in Ref. [1]. A translation formula, used to relate the DM-nucleon interaction cross section to the mass of the dark matter mediator, neglected a dependence on m_{DM} by using the nucleon mass in place of the reduced mass of the DM-nucleon system. The excluded range in the DM-nucleon interaction cross section in Fig. 5 of Ref. [1] was incorrectly shown as being independent of m_{DM} at low values of mass, roughly below 40 GeV. The correct CMS excluded region for $m_{\mathrm{DM}} > 1$ GeV, where the translation formula is reliable, is presented here in Fig. 1, which replaces Fig. 5 of Ref. [1].

References

[1] CMS Collaboration, Search for dijet resonances in proton–proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter and other models, Phys. Lett. B 769 (2017) 520, arXiv:1611.03568.

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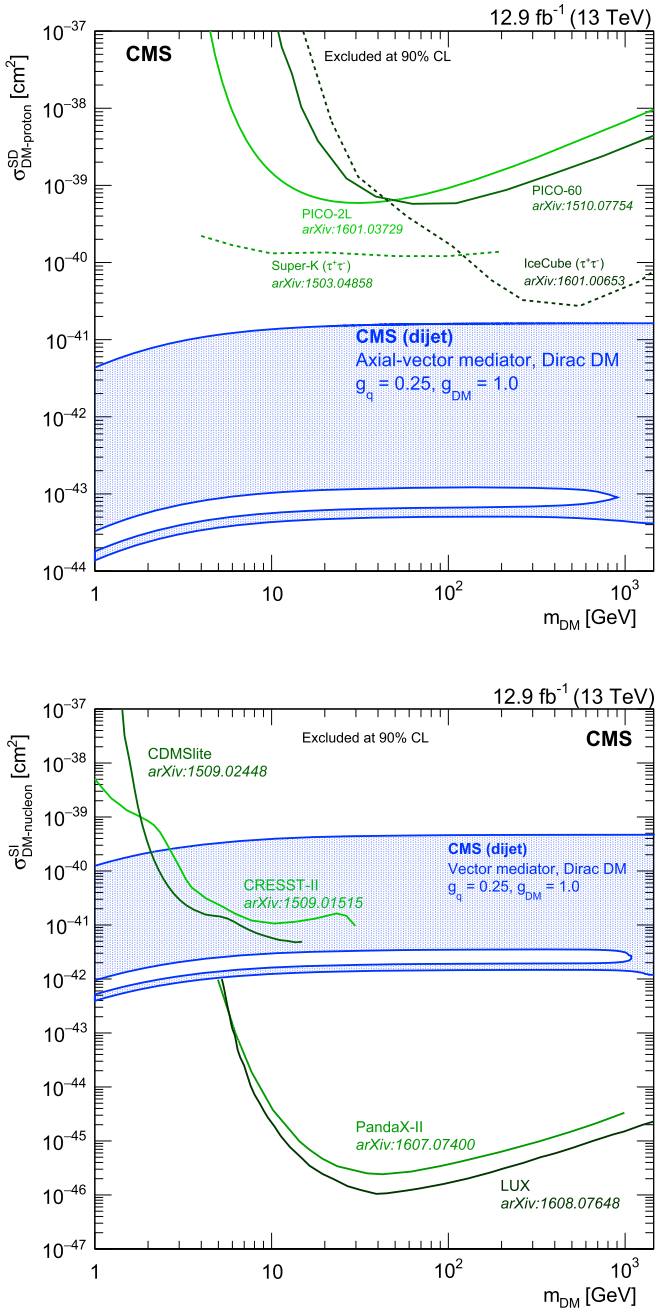

Fig. 1. Excluded regions at 90% CL in the plane of dark matter nucleon interaction cross section as a function of dark matter mass. See caption of Fig. 5 in Ref. [1] for additional details.